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ABSTRACT

This issues paper, the second in a series of eight, is intended to distill formative evaluation questions on topics that are central to the development of the higher and further education information environment in the United Kingdom. Issues Paper 1 introduced a framework for thinking about "good" learning. This paper complements Issues Paper 1 by extending the framework and making it somewhat more detailed. It also presents ideas about good learning as a set of propositions: (1) learning should be extensive; (2) learning involves construction of understandings acceptable in the communities of practice; (3) learning is a natural outcome of the normal workings of communities of practice; (4) learning is situated and hard to transfer; (5) engagement and practice make good learning; (6) learning involves challenge and scaffolding; (7) learning must embody an idea of progression; (8) learning is conversational and interactive; (9) learning involves effective use of reflection; (10) learning is not significantly limited by fixed abilities; (11) motivation is designed into curriculum, not added by charismatic teaching; and (12) teaching contributes to learning in various ways. The implications for the Distributed National Electronic Resource project and other learning project development are discussed. (SLD)

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How Students Learn: Propositions about 'Good Learning' in HE

EDNER Project

IssuesPaper 2

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How students learn: propositions about 'good learning' in HE

EDNER
(Formative Evaluation of the Distributed National Electronic Resource)
Project
Issues Paper 2

Issues Paper 1 introduced a framework for thinking about 'good learning' in higher education. This paper complements Paper 1 by extending the framework and making it somewhat more detailed. It also presents ideas about 'good learning' in a different way - as a set of ten propositions. The table is based on ideas developed at Lancaster by Peter Knight and Paul Trowler. They give an extended discussion in Knight & Trowler (2001, pp100-110). Application of the ideas to online learning in higher education is explored in Goodyear (2002).

	Proposition	**Explanation**
1	Learning should be extensive	It is no longer defensible (if ever it was) to define the outcomes of higher education purely and simply in terms of mastery of a subject. Outcomes now also need to include more generally useful skills, including so-called transferable skills, the capacity to act as an autonomous lifelong learner, a belief in one's own efficacy, etc.
2	Learning involves constructing understandings that are acceptable within communities of practice	Learning involves acts of *sensemaking* within a community that shares common interests, practices, language and other cultural artefacts and tools. Access to disembodied information has little to do with real learning.
3	Learning is a natural outcome of the normal workings of communities of practice	Participation in the day-to-day life of a community of practice is inseparable from learning. If someone has a legitimised role within a community of practice – however peripheral that role may seem – they cannot help but learn. In HE, learning may best be seen as induction into one or more communities of practice.
4	Learning is situated and hard to transfer	What is learned in one context tends to be hard to transfer to another – indeed the idea of 'transfer' may be suspect. However, learning in HE does require learners to be able to recognise community boundaries and shift between communities. It requires use of knowledge abstracted from specific contexts and the ability to work with different ways of knowing (epistemic fluency).
5	Engagement and practice make for good learning	Learning demands application (engagement in practice); skill-acquisition demands opportunities for repetition, feedback, fine-tuning, automation, etc.
6	Learning involves challenge and scaffolding	Learning can be a by-product of taking on a challenging new task; challenge and learning go hand in hand but challenge should not overwhelm. What one can do with others is in advance of what one can do alone – the scaffolding they provide helps one accept and overcome challenges.
7	Learning must embody	Learning involves qualitative change in understandings rather

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	an idea of progression	than quantitative accumulation of factual knowledge. Learners in HE typically move from relatively simple to more complex beliefs about the nature of knowledge and learning. Curriculum challenges need to reflect this.

8	Learning is conversational and interactive	Learning and practice in communities is inseparable from discourse; generation of narratives and explanations are key to sense-making; understanding others' accounts of the world is an important aspect of academic learning; sharing in the construction of knowledge demands communication and other forms of social interaction.
9	Learning involves effective use of reflection	'Conversations' can be with others but they can also be with oneself; self-explanations and 'replaying' and analysing one's experiences are important parts of sense-making.
10	Learning is not significantly limited by fixed abilities	IQ and other claimants to be measures of 'general ability' are poor predictors of complex learning or of successful progression within a community of practice; engagement/application entail hard work not good genes and are cultural not inherited; specific knowledge rather than general ability is a potent influence on learning; other so-called stable traits (eg learning style) are more context-sensitive than is often acknowledged.
11	Motivation is something designed into curriculum, not something added by charismatic teaching	People are motivated by goals they value, especially ones they have had chance to help shape; goals should be challenging but achievable; feedback aids persistence; intrinsic motivation accompanies a personal belief in the value of one's efforts –overuse of extrinsic motivators can undermine intrinsic motivation.
12	Teaching contributes to learning, but in various ways	Direct (didactive) teaching can be appropriate in helping learners reach mastery of tightly-structured subject matters – factual and rule-based material and skills coaching can be well served by direct teaching. But much of learning in HE involves uncertainty, complexity, ambiguity, weighing of evidence and judgement. Here, direct teaching is much less useful than planning and facilitating appropriate learning experiences.

Implications for DNER and related projects

These propositions have a number of potential implications for the DNER.

1. Images of how DNER materials and services will be used by students ought to be set and judged against a background that is broadly consistent with the propositions to be found in the table above. Where there appears to be a major discrepancy between the vision of learning and educational processes underpinning a project's work and the positions outlines in the Table, then some explicit justification of the project's views ought to be provided. (It is OK to depart from the views of learning expressed in the table, but that departure ought to be conscious and justified.)

2. A significant amount of the work being carried out within the DNER Learning and Teaching Programme is concerned with making better educational use of existing digital resources. This is being done through a number of means, including production of materials for teachers that explain or exemplify such uses. While the digital resources themselves may not carry any strong pedagogical commitments (they may well be open to a wide variety of uses), the accompanying teaching materials ought to reflect the best of what we know about learning in higher education. Again, it may be reasonable to depart from the propositions in the table, but this must be a conscious and justified choice. Care should be exercised in using teachers' own judgements about what makes for good learning. Working closely with teachers is

useful and may well be essential to effective roll-out and take-up of resources. But learning and teaching practices across UK HE are uneven and not all of what can be found is good. DNER resources should help transform learning and teaching practices for the better. Their assimilation into current and sometimes dubious practice is not an unequivocal marker of success.

3. Specific subsets of the principles may be used to inform the design and development of resources. This can be much harder than achieving the kind of 'broad brush conformity' mentioned in the previous two paragraphs. Using pedagogical theory to design technological aids to learning has been the goal of a great deal of well-funded R&D in the learning technologies field over the last 25 years or so (see e.g. Sleeman & Brown, 1982; Jones & Winne, 1992; Lajoie, 2000). In few cases has it been possible to show exactly how the functionality or look-and-feel of the finished product embodies pedagogical design principles. So caution needs to be exercised in handling pedagogical theory as a resource for design decisions – just as the principles of human-computer interaction (HCI) can be hard to apply to the specific decisions of interface design. While pedagogical and HCI principles cannot be used to determine design decisions, neither can they be ignored. Part of the purpose of theory-based evaluation is to encourage project teams to construct logic maps of their work (see Issues Paper 7). These logic maps contain elements of the project's design rationale – its articulation of why it believes what it is doing will work and meet the needs of users. The table above offers some pedagogical resources for creating some elements of this logic map/design rationale – resources (ideas, principles) which can accompany and balance ideas and principles derived from technological, HCI and other sources.

References and further reading

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EDNER Key Issues papers are intended to distil formative evaluation questions on topics which are central to the development of the UK's higher and further education Information Environment. They are presented as short check-lists of key questions and are addressed to developers and practitioners. Feedback to the EDNER team is welcomed.

Please address enquiries and comments to the EDNER Project Team at cerlim@mmu.ac.uk

EDNER is being undertaken by CERLIM at the Manchester Metropolitan University with CSALT at Lancaster University

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